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*USSR: Early June Prospects for Grain Production*

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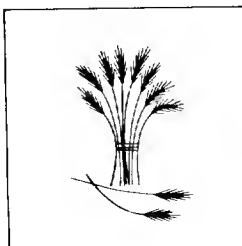
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## Environment Analysis Brief

### USSR: Early June Prospects for Grain Production

#### Summary

The combined effects of last autumn's low soil moisture and this year's winterkill have resulted in an estimated loss of 11 to 12 million hectares of Soviet fall-sown grains. Winter grain production from a surviving acreage of about 26 million hectares is currently projected to be no more than 45 million metric tons, 3.5 million tons less than last year's poor winter grain crop and some 18.5 million tons less than the record 1973 winter grain harvest. Winter grain output normally accounts for 30 percent of total grain production.

Although this year's loss of winter grains presents immediate problems for the Soviets, it does not preclude the possibility of an above-average total grain crop. The Soviets are relying upon the successful development of their spring grain crops to offset the lost winter grain production. The total area sown to spring grains, including corn, is expected to be near a record high of 104 million hectares. Weather conditions during the remainder of the crop season will be decisive in determining the size of the total 1976 grain harvest.

Conditions in most of the European USSR, as of 1 June, have been favorable for the growth and development of both the surviving winter grains and spring grains. Although surface soil moisture in the Volga Valley, northern Kazakhstan, and in much of the main spring grain areas east of the Urals, is somewhat better than a year ago, subsoil moisture generally remains seriously low. Spring grain yields in these areas will be primarily determined by seasonal precipitation in June and July.

Note: The Environment Analysis Staff (EAS) of the Office of Geographic and Cartographic Research is responsible for forecasting Soviet grain production. The EAS staff will publish regular crop assessments and estimates. All estimates are derived in accordance with agronomic principles emphasizing convergence of evidence.

This paper was produced by the Office of Geographic and Cartographic Research and coordinated with the Office of Economic Research. Comments and questions may be directed to [REDACTED] Code 143, Extension 3748. Date of information 1 June 1976.

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**Color IR Return Showing Crop Vigor Levels as of 1 May 1976**  
*(Landsat II Imagery, Krasnodar/Rostov)*



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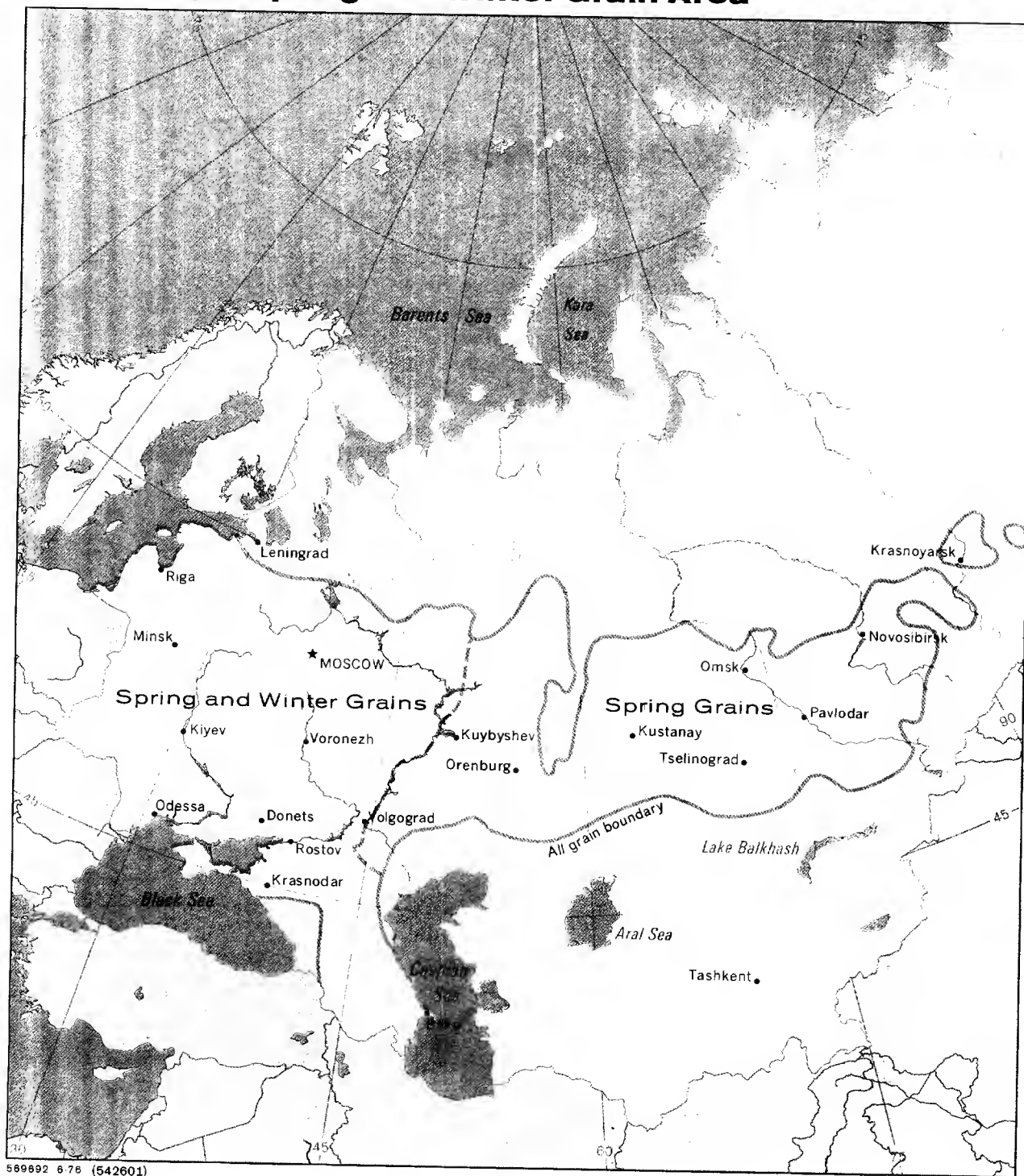
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Area of Imagery

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### USSR: Major Spring and Winter Grain Area



All grain boundary

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## Status of Winter Grains

### Winter losses

In the fall of 1975, the Soviets sowed winter grains on a near record 37.5 million hectares in an effort to compensate for the disastrous 1975 harvest. This was 2.5 million hectares more than the previous year and the largest fall-sown area since 1969. Soviet hopes of a bumper winter crop, however, were dashed by a combination of poor fall germination and winterkill.

The severe drought in 1975 left most of the winter grain regions with critically low soil moisture reserves. As a result, spotty germination and weak plant development was widespread. Many of the plants in these dry areas which did germinate did not build up a plant nutrient reserve adequate to withstand the rigors of winter. The areas most affected were the major winter wheat regions of the southern Ukraine, Moldavia, the eastern Central Black Earth zone, the southern Volga Valley and the northern Caucasus. Losses in many individual oblasts, particularly those surrounding the Black Sea, are estimated to be as high as 80 percent (see image).

Although the winter was not unusually severe, a cold snap in January and February inflicted considerable damage to the already weakened crop. In particular the important Volga region suffered above normal winterkill.

The cumulative effect of last autumn's low soil moisture and this year's winterkill is an estimated loss of 11 to 12 million hectares of winter grains, nearly a third of the fall-sown area.\* Normally, winterkill ranges from 15 to 17 percent of the sown area (see Table 1).

### Winter Grain Production

A maximum of 26 million hectares of winter grains remain to be harvested. Yields on surviving fall-sown grains are primarily determined by two factors; the condition of the plants coming out of winter dormancy, and precipitation through mid-June. Cool temperatures and above average precipitation in May in the European USSR have been favorable for grain development on the remaining acreage. However, because of poor fall germination and winter damage, many of the surviving fields contain thin and spotty stands of plants, indicating below normal yields. Assuming optimum weather conditions through this year's harvest, the production obtainable from the 1975-76 winter grain crop is currently projected at 45 million metric tons. This is approximately 3.5 million metric tons less than last year's poor winter grain crop and some 18.5 million tons less than the record 1973 winter grain harvest (see Table 1).

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\*Includes area for green chop and early season pasturing of livestock.

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TABLE 1

USSR: Winter Grain Sown and Harvested Area,  
Winterkill, and Production; 1969-1976

	Million Hectares <sup>1</sup>			Million Metric Tons
	Area Sown	Area Harvested	Winterkill	Production
1969 . . . . .	37.7	24.5	13.2	39.1
1970 . . . . .	37.2	29.8	7.4	57.4
1971 . . . . .	36.1	31.5	4.6	63.0
1972 . . . . .	34.9	24.4	10.5	40.6
1973 . . . . .	28.4	26.9	1.5	63.5
1974 . . . . .	37.0	29.8	7.2	62.5
1975 . . . . .	35.5	29.2	6.3	48.6
1976 . . . . .	37.5	25.5 - *	11-12*	45*
		26.5		

<sup>1</sup> All sectors including state and collective farms as well as private holdings and other State enterprises.

\*Estimated as of 1 June.

**Status of Spring Grains****Sown Acreage Pattern**

The Soviets are depending upon the successful development of their spring grain crops to offset the above-normal winter grain losses. Average yields on the expanded spring grain area could do much to offset the shortfall in winter grains. Weather conditions for the remainder of the growing season will be decisive in determining the overall size of the 1976 grain harvest.

By 31 May, 98 million hectares had been sown to spring grains (including corn). The total area sown is expected to be a record high of approximately 104 million hectares (see Table 2). The largest increase is expected to be in winterkilled areas resown to spring barley and corn.

TABLE 2

USSR: Harvested Area

(million hectares)

	Average 1973-75	Estimated 1976
Total . . . . .	127	130
Winter Grains . . . . .	28.5	26 <sup>a</sup>
Spring Grains . . . . .	98.5	104 <sup>b</sup>

<sup>a</sup> Reflects an estimated 9½ million hectares of winterkill plus an allowance of approximately 2 million hectares for use as green chop and spring pasture out of total sown acreage of 37.5 million hectares.

<sup>b</sup> Estimated sown acreage. Much of the land used to expand the spring grain area will undoubtedly be marginal. Some abandonment may take place.

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The sowing of spring grains this year in most areas of the USSR began near the long-term average although approximately ten days later than in 1975. However, with the exception of areas in northern European Russia where wet weather delayed spring sowing operations, favorable weather conditions in late April and in May allowed field work to progress rapidly. Data for the end of May indicates that this year's total spring grain sowing progress is ahead of the 1974 and 1975 pace.

#### Spring Grain Production

The outlook for spring grain production is more tentative than prospects for winter grains. Spring grains are grown primarily in low-moisture areas and moisture deficiency is the principal factor limiting yields. As a result, the spring grain yields in these areas are largely dependent upon rainfall from May through July.\*

As of 1 June, post-seeding soil moisture and temperatures in northern European Russia have been favorable for the planting and development of spring grains. Moisture reserves in southern European Russia are near normal and the more advanced crop development is reportedly good.

Although surface soil moisture in the Volga Valley, northern Kazakhstan, and in much of the main spring grain area east of the Urals, is somewhat better than a year ago, subsoil moisture remains seriously low. Unless these regions receive above normal rainfall during the next 60 days, the USSR will fail to achieve the above average harvest they desperately need to recover from last year's harvest failure.

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\*Soviet crop disease forecasts indicate that there is increased probability of a significant outbreak of leaf rust in the northern Kazakhstan spring wheat area this year. Leaf rust in spring and winter wheat in the non-Black soil zone of European Russia will also probably be higher than usual. This early projection presumes wet weather conditions in June and July favorable to disease development. Under these conditions, losses to wheat rust could reduce the 1976 Soviet wheat crop by as much as 15%, three times the normal loss.

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